

HOW TO MAKE SENSE OF HUMAN RESOURCE MANAGEMENT;
EMPLOYEES' ATTRIBUTION TO EXPLAIN THE
HRM – PERFORMANCE RELATIONSHIP¹

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ABSTRACT

In an experimental and a field study, we studied whether high-commitment Human Resource Management (HC-HRM) is more effective on employee outcomes when employees can make sense of HRM (attribute HRM to management). In the experimental study (n = 354) employees' HC-HRM perceptions were evoked by a management case and their attributions were manipulated with an information pattern based on the three dimensions of the co-variation principle of the attribution theory: distinctiveness, consistency and consensus. As expected, the results showed that the effect of HC-HRM on affective organizational commitment was stronger when employees understand HRM as was intended by management. This experimental finding was confirmed in a cross-level field study (n = 639 employees within 42 organizations): the relationship between HC-HRM on one hand and affective organizational commitment and innovative behavior on the other hand was stronger under the condition that employees could make sense of HRM.

HOW TO MAKE SENSE OF HUMAN RESOURCE MANAGEMENT; THE MODERATING EFFECT OF EMPLOYEE ATTRIBUTION ON THE HRM – PERFORMANCE RELATIONSHIP

In addition to the *content-based approach* in human resource management (HRM), also known as the “best practices” approach (e.g., Huselid, 1995; Wright, Gardner, Moynihan, & Allen, 2005; Delery & Doty, 1996; Huselid & Becker, 1996; Combs, Liu, Hall, & Ketchen, 2006), in the past decade the *process-based approach* in HRM has emerged (see Sanders, Shipton, & Gomes, *in press*). While in the content-based approach researchers focus on the inherent virtues (or vices) associated with the content of HR practices to explain performance, proponents of the process-based approach highlight the importance of the psychological processes through which employees attach meaning to HRM in explaining the relationship between HRM and performance. HRM may result in different individual or organizational outcomes because employees cannot understand HRM in the way it was intended by their managers.

Bowen and Ostroff (2004) were among the first scholars to criticize the one-sided focus on the content-based approach. They explicitly highlight the importance of the psychological processes through which employees attach meaning to HRM and applied the co-variation principle of attribution theory (Kelley, 1967; 1973) to the domain of HRM. They developed a framework for understanding how HRM as a system can contribute to employee and organizational performance. According to the co-variation principle of attribution theory employees should perceive HRM as being distinctive, consistent and consensual to interpret the messages conveyed by HRM in a uniform manner. In such cases they will have a better understanding of the kinds of behaviors management expects, supports and rewards (see also Schneider, Brief, & Guzzo, 1986).

Our study contributes to the existing literature by addressing a blind spot in previous scholarship with respect to the process-based approach. Although recently more studies have focused on the impact of employees’ perceptions of HRM (Sun, Aryee, & Law, 2007; Nishii & Wright, 2008; Gong, Law, Chang, & Xin, 2009; Takeuchi, Chen, & Lepak, 2009; Strumpf, Doh, & Tymor, 2010; Messersmith, Patel, & Lepak, 2011; Beletskiy, 2011; Kehoe & Wright, 2013), only a few studies thus far have related employees’ perceptions to the attribution process. Sanders, Dorenbosch, and De Reuver (2008) found in a multi-level study of 18 departments within four Dutch hospitals that HRM

perceived as distinctive and consistent was positively related to affective commitment. In a replication study, Li, Frenkel, and Sanders (2011) found in their sample of Chinese hotels that employees' perception of HRM as distinctive was related to intention to quit, work satisfaction and work engagement. Nishii, Lepak, and Schneider (2008) introduced the term HR attribution, and focused on the locus of causality: why management adopts and implements HR practices. They showed that the HR attributions employees make are related to their commitment and satisfaction.

Instead of only focusing on the dimensions of the process approach (Sanders et al., 2008, Li et al., 2011; Nishii et al., 2008) while neglecting the content of HRM, in this paper we study content and process in an integrative way. Following Bowen and Ostroff (2004), who specify that "HRM content and process must be integrated effectively in order (...) to link to firm performance" (p. 206), we view HRM as a symbolic or signaling function that sends messages to employees so they can understand it. Only recently a few studies combined HRM content and process (Katou & Budhwar, *in press*; Bednall, Sanders & Runhaar, *in press*; see also Sanders et al, *in press*). In contrast to these studies in this paper we rely more on the co-variation principle of the attribution theory, a theory derived from research in social psychology to explain how people process information in order to make sense of their situation (Kelley, 1972; Thibaut & Walker, 1975), and rely less on the framework as was developed by Bowen and Ostroff (2004).

This paper contributes to existing knowledge by providing empirical evidence of the HRM process for the HRM–performance relationship. Specifically, using Kelley's co-variation principle of attribution theory we demonstrate how employees' attribution adjusts the effects of high-commitment HRM (HC-HRM) on two desired employee outcomes – affective (organizational) commitment, defined as emotional attachment towards the organization (Allen & Meyer, 1990); and innovative behavior, defined as the development and implementation of new ideas (Scott & Bruce, 1994) – both of which have been linked to important outcomes like productivity and performance.

Among the most obvious reasons why only a few studies to date have examined the process approach and focused on employees' attribution is its complexity, in terms of both theory and research methodology, and the amount of resources necessary to study the multi-level relationships (Guest, 2011; see also Beletskiy, 2011). To simplify and clarify the complexity inherent in the HRM process,

we have applied a mixed-method research design. In Study 1 we adopted an experimental design (Finch, 1987; Alexander & Becker, 1978; see also Yang & Dickinson, 2013) with the vignette (or scenario) technique to establish the cause-and-effect link between HRM content and attribution on affective commitment. An experimental design provides an excellent opportunity to study cause–effect relationships in a controlled environment (Wright, Gardner, Moynihan, Park, Gerhart, & Delery, 2001). The experimental design using the vignette technique allows us to elicit respondents’ perceptions of HRM content, manipulate the attribution, and standardize background information, which enhances our confidence in drawing a cause-and-effect conclusion. In this case respondents are not referring to their own organization but to the organization as presented in the scenario.

With the cause-and-effect relationship established in Study 1, we carried out a survey study (Study 2) to strengthen the external validity, generalizing our research findings to real-life situations. The survey design creates an opportunity to test a cross-level model of HRM at the organizational level and the attribution at the individual level with respect to affective commitment and innovative behavior. Using this mixed-method research design, we complement the strength of an experimental study (i.e., their internal validity, which makes it possible to draw causal explanations) with the strength of survey research (i.e., their external validity, which makes it possible to generalize the results). In this way we are able to present “the best of both worlds”.

The remainder of the paper proceeds as follows. First we discuss the theoretical mechanism of the co-variation principle of attribution theory as was elaborated by social psychologists like Kelley (1967; 1973; Kelly & Michela, 1980) and was translated to the HRM domain by Bowen and Ostroff (2004). This theoretical discussion builds a specific hypothesis that was tested by leveraging an experimental study (Study 1) and survey research (Study 2). Discussion of the results is followed by an assessment of how the study findings fit within existing HRM theory and research, and directions for future research are proposed.

ATTRIBUTION THEORY RELATED TO THE HRM DOMAIN

People, like naïve psychologists (Heider, 1958), need adequate and unambiguous information to understand the causes of behaviors and situations. According to attribution theory, people use these causal explanations (*attributions*) to make sense of their surroundings, improve their ability to predict

future events, and attempt to (re)establish control over their lives (Kelley, 1972; 1973; Thibaut & Walker, 1975). In addition, the attributions people make systematically influence their subsequent behaviors, motivations, cognitions and affect (Weiner, 1985).

Attribution theory (Fiske & Taylor, 1984; 1991) is concerned with the attributions people make to understand their own and others' behavior. People use internal (dispositional) and external (environmental) attributions when answering the question why they and others behave in the way they do. For instance if an employee does not receive a promotion or a bonus and tries to understand why, the employee can ascribe this to an internal attribution (lack of own abilities) or an external attribution ('the supervisor does not like me'). In line with this theory, Nishii et al. (2008) studied employees' HR attributions by asking employees why HR practices exist. The idea of their research is that employees respond attitudinally and behaviorally to HR practices based on attributions they make about management's purpose in implementing HR practices. Attributions that HR practices are designed according to management's intent to enhance service quality and employee well-being were positively related to employee attitudes, and attributions that HR practices are designed due to management's interest in cost reduction and exploiting employees were negatively related to employee attitudes.

In an influential stream of the attribution theory, Kelley (1967; 1973) explains how people process information to make attributions. The co-variation principle of attribution theory suggests that people try to understand the cause of situations by considering information related to the distinctiveness, the consistency and the consensus of the situation. When people can interpret a situation as distinctive, consistent and consensual, they can make confident attributions about the cause-effect relationships and can better understand the situation. *Distinctiveness* refers to features that allow an object to stand out in its environment, thereby capturing attention and arousing interest (Kelley, 1967: 102). *Consistency* is the co-variation of information across time and modalities. If the information is the same for all modalities, individuals perceive this situation as consistent. And *consensus* is the co-variation of behavior across different people. If many people perceive the situation in the same way, consensus is high.

The co-variation principle suggests that the combination of these three dimensions results in different information patterns that lead to one of three general classes of causation (see Table 1). The

three causes to which event–effect relationships can be attributed are: stimulus or entity; person; and context and time (Kelley, 1967; Orvis, Cunningham, & Kelley, 1975). If an event conveys information respondents perceive as highly distinctive, highly consistent and high in consensus, respondents will attribute this event to *stimulus* or *entity*; the event is considered in terms of its underlying cause. Social psychologists refer to this kind of attribution as external, stable and controllable (Weiner, 1985). If an event conveys information respondents perceive as low in distinctiveness, high in consistency and low in consensus, respondents will attribute this event to *person*; only this individual perceives the situation in this way. This kind of attribution is referred to as internal. If an event conveys information respondents perceive as highly distinctive, low in consistency and low in consensus, respondents will attribute the event to *context and time*; the circumstances under which the event has happened, which is considered external, unstable and uncontrollable.

Most of the work on attribution has been in the field of social psychology, and not within organizational science (Dasborough, Harvey, & Martinko, 2011; Martinko, Douglas, & Harvey, 2006). The majority of the work on attribution theories in organizational contexts has been concerned with achievement-related attributions that are used by individuals to account for the successes and failures of others and themselves. When applying the co-variation principle to HRM, we expect that in the HHH pattern, where employees perceive HRM as standing out (High distinctiveness), perceive that the different HR practices are aligned with each other (High consistency), and perceive that colleagues comprehend HRM in the same way they do (High consensus), employees will attribute HRM to stimulus or entity, i.e., the management of the organization (Bowen & Ostroff, 2004). Our point of view can be explicated by the following example: Judy an employee in a multinational corporation observes the importance of the performance appraisal in her organization. In addition she perceives that the criteria for this performance appraisal are the same as for the pay for performance, and for making promotion, and she notices that her colleagues share the perceptions regarding this HR practice. In this case Judy can make sense of HRM in her organization, and sees HRM as the driver of what is happening in the organization.

In contrast, if employees perceive HRM in the LHL pattern, as not standing out (Low

distinctiveness), that the different HR practices are aligned with each other (High consistency), and that colleagues comprehend HR practices in a different way (Low consensus), they will attribute HRM to themselves: it is only this employee who perceives HRM in this way. In the case of Judy, she is not clear about the importance of the performance appraisal in her organization. Although the criteria for the performance appraisal are the same as for the pay for performance and for promotion, she notices that her colleagues perceive the performance appraisal process in a different way. She feels that she is the only one who understands HRM in this way.

If employees perceive HRM in the HLL pattern, as standing out (High distinctiveness), that the different HR practices are not aligned with each other (Low consistency), and that colleagues comprehend HRM in a different way (Low consensus), employees will attribute HRM to the current organizational circumstances (context and time) under which management makes such HR policies. In this case Judy does observe the importance of the performance appraisal for the organization, but perceives that the criteria for pay for performance and for promotion are different from the ones for the performance appraisal. In addition she notices that her colleagues perceive the performance appraisal in a different way. Judy assumes that HRM within the organization is caused by external circumstances which she does not understand.

Attribution theorists argue that, among the three dimensions required for attribution judgments, *distinctiveness* is the most critical (Kelley, 1967; Fiske & Taylor, 1984). Kelley (1967) defined distinctiveness as standing out in the environment, suggesting that distinctiveness can be positive (e.g., the target stands out because it is much better than the rest) or negative (the target is observable because it is much worse than the rest). Bowen and Ostroff (2004) mainly take the positive direction of distinctiveness into account. For instance, for “legitimacy of authority,” one of the four characteristics that can foster distinctiveness, Bowen and Ostroff (2004, p. 212) explained that, “if HRM is perceived as having high status and credibility in relation to the overall management system, it will be perceived as being distinctive.” HRM can however also be perceived as being distinctive because it is perceived as low-status and low-credibility (see also Ulrich, 1997; Ulrich & Brockbank, 2005). Results of an experimental study (Sanders, Yang, & Kim, 2012) showed that when employees perceive HRM as high in distinctiveness in the positive direction, this strengthened the relationship

between HC-HRM and employee outcomes. In the negative direction, high distinctiveness did not have a significant effect on this relationship. Given these results, in the current studies we only take the positive direction of (high) distinctiveness into account, and compare it to low distinctiveness (not observable).

THE INFLUENCE OF EMPLOYEES' ATTRIBUTION IN THE HRM–PERFORMANCE RELATIONSHIP: FORMULATION OF A HYPOTHESIS

In the last three decades there has been much interest in HRM systems such as high-performance work systems (HPWS; Huselid, 1995; Huselid & Becker, 1996; Collins & Smith, 2006), and high-commitment HRM (HC-HRM; Walton, 1985). HPWS are systems that utilize a managerial approach that enables high performance of employees (Pfeffer, 1998). The main idea of HPWS is to create an organization based on employee involvement, commitment and empowerment. Using survey data from 968 firms from many industries, Huselid (1995) found a positive relationship between HPWS and productivity (sales per employee) and corporate financial performance, and a negative relationship with employee turnover. Other studies (Mac Duffie, 1995; Ichniowski, Shaw, & Presnushi, 1997; Sun et al., 2007) have come to the same conclusions. High-commitment can be considered the European term for HPWS (Hutchinson, Purcell, & Kinnie, 2006; Boxall & Macky, 2009) and studies on HC-HRM show more or less the same results (see for instance Gould-Williams, 2004). Although both HPWS and HC-HRM have yet to be defined authoritatively, they generally involve a bundle of HR practices, including employment security, internal labor markets, selective recruiting, extensive training, learning and development, employee involvement and performance-based pay and teamwork (Snell & Dean, 1992; Pfeffer, 1998). Because our two studies are conducted within Europe (the Netherlands) we use the term high-commitment HRM (HC-HRM) here.

Scholars assume that these bundles of HR practices have the potential to enhance employees' competencies, motivation and performance, and ultimately contribute to organizational effectiveness (Becker & Gerhart, 1996; Collins & Smith, 2006). To explain the mechanism underlying the relationship between HC-HRM and employee outcomes, most researchers rely on social exchange theory (Blau, 1964) and the norm of reciprocity (Gouldner, 1960). According to this view, employees perceive HC-HRM as benevolence on the part of their employer (Rousseau, 1995), and thus respond

to it with an increased sense of obligation to work harder and displaying a higher level of commitment, which ultimately leads to better performance for the organization. Empirical studies have demonstrated that HC-HRM is associated with mutual investment and positive social exchange relationships between employers and employees (Collins & Smith, 2006; Sun et al., 2007). However HC-HRM is not always effective and employees do not always feel obligated to work harder when their employer endorses managerial practices such as HC-HRM (Wood, 2003; Wall & Wood, 2005). In this study we argue that to understand the HRM–performance relationship, the HRM process needs to be taken into account.

Following the co-variation principle, we expect that the effect of HC-HRM on employee outcomes is maximized when employees attribute HRM to management (the stimulus). Management in this case consists of all managers who are involved with HRM issues within an organization, including senior, line, and HR managers. In such cases, management is able to convey unambiguous messages about what behavior is appropriate and employees can understand clearly what is expected of them. In contrast, when employees attribute HC-HRM to themselves (the informational pattern of LHL) or to context and time (the HLL pattern), their understanding of what management intended and what is expected from them is not clear. We expect that in these situations the effect of HC-HRM on employee outcomes is less effective.

For Study 1 (experimental design) we focus on affective organizational commitment since attitudinal variables are optimal outcomes for the vignette technique (Weber, 1992). *Affective organizational commitment* as an employee attitude is a widely researched concept (Meyer, Stanley, Herscovich, & Topolnytsky, 2002). During the 1980s Meyer and Allen (1991; 1997) developed their three-component model, in which they recognized affective, calculative (more recently called ‘continuance’), and normative components of organizational commitment. In this three-component model affective commitment is defined as a voluntary emotional attachment to and emotional sense of identification with the organization, continuance commitment is defined as employee commitment based on the economic and social costs of leaving the organization, and normative commitment is defined as a sense of moral obligation to the organization (Allen & Meyer, 1990; Meyer & Allen, 1991; 1997). Despite variations in how the components are measured, past studies have suggested that

the three components have a valid global application (Shen & Zhu, 2011). In their meta-analyses Meyer et al (2002) found a substantial positive relation between affective and normative commitment suggesting that there is considerable overlap in the two constructs. Continuance commitment was negatively and moderately related with affective and normative commitment.

To be able to measure the combined effect of HC-HRM and its attributions we chose affective organizational commitment as the outcome measure. The reasons for this are threefold. First, research has shown a consistent relationship between affective commitment and critical employee behaviors such as performance, absenteeism and organizational citizenship behavior (Meyer et al., 2002), which is less the case for normative and continuance commitment. Second, since continuance commitment seems to tap two dimensions (i.e., lack of alternative jobs and costs associated with leaving), considerable concern has been raised about this component's validity. Third, continuance commitment appears to reflect an attitude toward a specific course of action (i.e., staying with or leaving the organization while considering the rewards and/or costs related to this action) rather than an attitude toward the organization as such.

We therefore expect that:

H1: Employees' perception of HC-HRM as highly distinctive, highly consistent and highly consensual (attribution to management) strengthens the relationship between HC-HRM and affective organizational commitment.

STUDY 1

AN EXPERIMENTAL STUDY EXAMINING THE ROLE OF KELLEY'S CO-VARIATION PRINCIPLE IN THE EFFECT OF HC-HRM ON AFFECTIVE COMMITMENT

We employed an experimental design using vignettes (or scenarios) as stimuli to test the moderating effect of employees' attribution on the HC-HRM and affective commitment relationship. Vignettes can be used in two ways. In a *constant-variable-value vignette* (Cavanagh & Fritzsche, 1985) all respondents read an identical story and respond to the described situation by revealing their judgment, attitudes, and behavioral intention. Vignette in this way works as a kind of simulation of a real-life situation with the purpose of eliciting respondents' reactions. The underlying assumption is that differences across individuals contribute to the disparities among outcome variables since all

respondents are presented with an identical situation. In our study this constant-variable-value vignette is used to elicit respondents' perceptions of HC-HRM.

The other type of vignette is referred to as a *contrastive vignette* (Alexander & Becker, 1978; Burstin, Doughtie, & Raphaeli, 1980), in which respondents in different groups read different versions of vignettes (between-subject design) or the same respondents read different versions of vignettes consecutively (within-subject design). Manipulation of the concerning factors is achieved by altering key words or sentences. Altering words or sentences may not be a strong manipulation in comparison to interventions in field experiments; however, it allows researchers to effectively modify "precise references" so that the full variation of the hypothetical factors can be manipulated systemically. The purpose of this minimal manipulation is to demonstrate that "even under the most inauspicious circumstances, the independent variable still has an effect" (Prentice & Miller, 1991, p. 161). In this study, we manipulate respondents' information patterns in terms of distinctiveness, consistency, and consensus with contrastive vignettes.

Although in the experimental research the terms "vignette" and "scenario" are used interchangeably, we decided to use the term "scenario" for the constant-variable-value vignette (the management case in which HC-HRM is executed by a fictional organization) and the term "vignette" for the contrastive vignette (referring to the manipulation of distinctiveness, consistency, and consensus). Following the co-variation principle (Kelley, 1967; 1973), we employed an research design by taking into account the conditions corresponding to the three informational patterns: 1) High distinctiveness, High consistency and High consensus (the HHH pattern), which is assumed to lead respondents to attribute to management; 2) Low distinctiveness, High consistency and Low consensus (the LHL pattern), which is assumed to lead respondents to attribute to themselves; and 3) High distinctiveness, Low consistency and Low consensus (the HLL pattern), which is assumed to lead respondents to attribute to context and time.

METHOD

Sample. A total of 354 employees from four Dutch health care organizations voluntarily participated in this study (response rate = 35%). The health care organizations were all medium sized. The mean age of the respondents was 41.22 (SD = 11.91), and 70% were female. Of the respondents,

49% had received higher education. The respondents had worked an average of 13.92 years ($SD = 11.82$) within their organization. None of the employees held a management position.

Procedure. Three research assistants helped us with approaching organizations. Organizations were approached by the research assistants and the first author of this article by way of e-mail, telephone and face-to-face contact with HR managers (response rate = 12%). The main reasons for this low response rate were problems within the organizations due to the current economic situation, previously existing annual (satisfaction) surveys, no time to join this research or not perceiving the experimental design as relevant for their organization. The questionnaires were randomly distributed via e-mail and intranet to most employees of the organizations. Only employees without an e-mail address received a paper version of the questionnaire. The questionnaire was introduced with an invitation letter, which contained information about the research. In this letter the confidentiality of the research was addressed. After two weeks a reminder was sent.

Measurements. All items were measured on a four-point scale (1 = *totally disagree/never* to 4 = *totally agree/always*).

HC-HRM. Respondents were presented with a management case that described HC-HRM implemented by a fictional company. In the introduction we briefly described the structure of this organization: the Finance department is responsible for financial issues; the HRM department is responsible for personnel-related issues; the Information Technology (IT) department supports the computer systems within the company; the Communications department is responsible for both internal and external communications of the organization; and the Product Development (PD) department is responsible for designing and developing new electronic products. Respondents were asked to imagine themselves working in the PD department in this company. After the introduction, HC-HRM was described in the scenario as follows:

“Management of your company tries to create a positive and productive atmosphere. To reach this, employees are asked to participate in decision making and your opinions are taken seriously. Management takes care that employees are informed about important decisions made by the management. In your performance appraisal attention is paid to your personal development, and training and possibilities to develop yourself are offered. Furthermore management has reserved a financial budget for the development of the employees: for instance costs for an internet connection at home are paid by the company, and laptops are available so employees can work where ever they like.”

Immediately after the management case, a seven-item HC-HRM scale adapted from Snell and Dean (1992) was utilized to measure respondents' perceptions of the extent of HC-HRM executed in this fictional company. Items began "If I were working in this company" Examples of the items are: "... I would be encouraged to participate in decision making" and "... I would participate in goal setting and appraisal." Reliability of these seven items is good (Cronbach's $\alpha = .78$).

Attribution. We manipulated the three types of attribution in terms of the informational pattern characterized by a combination of distinctiveness, consistency and consensus. Below are the descriptions of the different conditions.

High distinctiveness, High consistency, High consensus condition:

"You notice in your company that HRM in comparison to other companies provides better employment conditions, that the different HR practices like recruitment & selection, reward and training are aligned to each other, and that rules and policies from the HR department are comprehended in the same way among your colleagues."

Low distinctiveness, High consistency, Low consensus condition:

"You notice in your company that the different HR practices like recruitment & selection, reward and training are aligned to each other, and that rules and policies from the HR department are comprehended in a different way among your colleagues."

High distinctiveness, Low consistency, Low consensus condition:

"You notice in your company that HRM in comparison to other companies provides better employment conditions, that the different HR practices like recruitment & selection, reward and training are not aligned to each other, and that rules and policies from the HR department are comprehended in a different way among your colleagues."

We conducted a manipulation check by asking for respondents' perception of distinctiveness, consistency and consensus using the following three items (adapted from Delmotte, De Winne, & Sels, 2012): 1) "HRM within this organization has added value" (distinctiveness); 2) "The different HR practices in this organization are not aligned to each other" (consistency); and 3) "My colleagues perceive the HR practices in the same way" (consensus).

Affective organizational commitment was measured using four items from Allen and Meyer (1990). Example items were: "If I were working in this companyI would be very happy to spend the rest of my career within *this* organization" and ".....I should feel part of the family of *this* organization" (Cronbach's $\alpha = .78$). Affective organizational commitment is measured in the same way across the three groups. Given the fact that we randomly assigned respondents to the three groups, the confounding variables are theoretically controlled. This means that respondents are assumed to

rely only on the information provided by the scenario (the description of the fictional company) and the vignette (the informational pattern used for the manipulation) to rate these different items.

Controls. We collected respondents' demographic data, such as age, sex, level of education and tenure. To rule out that these factors might influence respondents' perceptions of the scenario and vignette and their ratings on the dependent measure, we controlled for these demographic variables.

RESULTS

Manipulation check. First, we compared respondents' scores on distinctiveness, consistency and consensus within each condition (see Table 2). In the HHH condition, there was no significant difference across the three dimensions (all means > 2.89, $F(2,108) = 1.21$, ns). In the LHL condition, respondents reported a significantly higher score on consistency than on distinctiveness and on consensus ($F(2,113) = 4.85$, $p < .01$). In the HLL condition, respondents reported a significantly higher score on distinctiveness than on consistency and on consensus ($F(2,113) = 5.75$, $p < .01$). Next, we compared respondents' scores on the three dimensions across the three conditions. For distinctiveness, respondents in the HHH and HLL conditions reported a significantly higher score than those in the LHL condition ($F(2,345) = 24.65$, $p < .01$). For consistency, respondents in the HHH and LHL condition reported significantly higher scores than those in the HLL condition ($F(2,345) = 23.36$, $p < .01$). For consensus, the scores in the HHH condition were significantly higher than those in the LHL and HLL conditions ($F(2,345) = 43.42$, $p < .01$). Overall, the manipulation check showed our manipulation worked well.

To test our hypothesis, the LHL and HLL conditions were combined and contrasted with the HHH condition (LHL and HLL condition = 0, HHH condition = 1) and the interaction effect was calculated by multiplying HC-HRM and the condition.

Descriptive analysis. Table 3 presents correlations, means and standard deviations for the studied variables. The range of perception of HC-HRM (min. = 1.89, max. = 3.78, mean = 2.85, SD = .47) suggests that respondents who were presented with the same scenario did perceive HC-HRM differently, which creates a chance for us to detect its association with affective commitment. Affective commitment was significantly related to respondents' HC-HRM perception and to their

attribution. None of the demographics of the respondents were related to either the dependent or independent variables.

Hypothesis testing. The data were analyzed by means of multiple moderated regression models (Aiken & West, 1991). In model 1 we entered the controls and in model 2 we added the two main effects, HC-HRM and attribution (1 = HHH condition; 0 = other conditions), followed by their interaction in model 3. Table 4 presents the results of the regression models. Respondents' HC-HRM perception was significantly related to affective commitment ($\beta = .14, p < .05$). In comparison to the conditions of LHL and HLL, the HHH condition had a stronger effect on affective commitment ($\beta = .22, p < .01$). Further, as expected, the interaction between respondents' HC-HRM perception and their attribution had a significant effect on affective commitment ($\beta = .30, p < .01$). The interaction is depicted in Figure 1. The figure shows that HC-HRM had a stronger effect on affective commitment in the HHH condition (attribution to management) (simple slope: $\beta = .37, p < .05$) than in the HLL or the LHL condition (simple slope: $\beta = -.05, ns.$). These findings confirm our hypothesis.

CONCLUSIONS AND DISCUSSION

Using a scenario and vignettes as stimuli, we examined the moderating effect of employees' attribution (HHH versus HLL and LHL) on the relationship between HC-HRM and affective commitment. The results showed that respondents' HC-HRM perception stimulates their affective commitment in a stronger way when they attribute HC-HRM to management than in the other two conditions, confirming the applicability of the co-variation principle in studying HRM. This finding supports our hypothesis, suggesting that in order for HC-HRM to be (more) effective, employees need to be able to make sense of it. If employees fail to make sense of HC-HRM as it was intended by management (such as in the HLL and the LHL patterns), HC-HRM becomes less effective.

An important methodological contribution of this experiment is that the vignette (scenario) technique is a proper tool for studying HR-related topics. It can be used not only as a management case to elicit respondents' perceptions of HC-HRM (scenario) but it can also be used as a way of manipulating HR attribution (vignette). With this combination, we operationalized HC-HRM independently from respondents' attribution (i.e., respondents attached different meanings to HC-HRM through the experimental manipulation). In this way the vignette technique seems a useful tool

for examining the dynamics of *how* HRM content in combination with the processes of employees' attribution affects employee outcomes.

The experimental design enables us to claim a cause-and-effect relationship between HC-HRM, attribution and affective commitment. There are, however, costs to these advantages, such as weak external validity (Bracht & Glass, 1968), which the following study was designed to address.

STUDY 2

A FIELD SURVEY STUDY TO TEST THE CO-VARIATION PRINCIPLE

Study 2 was designed to consolidate the findings of the experimental study through a survey study, with three improvements. First, all constructs were measured using existing scales, which creates an opportunity to extend the co-variation principle with three conditions to full-model testing with eight conditions (high vs low distinctiveness X high vs low consensus X high vs low consistency). Second, HC-HRM is considered as a higher-level construct at the organizational level rather than being understood through employees' perception at the lower level (Wright & Boswell, 2002). Third, we included an employee behavioral outcome to examine whether we could generalize the experimental findings regarding an attitude to an employee behavioral outcome: innovative behavior. Thus for this field survey study we propose:

H2: Employees' perception of HC-HRM as highly distinctive, highly consistent and highly consensual (HHH pattern; attribution to management) strengthens the relationship between HC-HRM on one hand and affective commitment and innovative behavior on the other hand.

METHOD

Sample. A total of 639 employees from 42 Dutch organizations voluntarily participated in this study (response rate = 76%). The mean age of the respondents was 34.34 years of age (SD = 12.14), and 46% were female. Of the respondents, 59% had received a higher education. The respondents had worked an average of 10.76 years (SD = 8.92). None of the employees had a managerial position. The organizations are in different sectors, including agriculture, livestock, hunting, fishing, mining and industry (17%), commercial services (40%), and non-commercial services (27%), with 16% in other sectors. The organizations differ in size in terms of total employees within the organization: 12% of

the organizations had fewer than 100 employees, 28% of the organizations employed between 100 and 250 employees, and most of the organizations (60%) were larger than 250 employees.

Procedure. Data collection in this study was done with the help of students. Using the social networks of these students, 50 organizations were approached and 42 agreed to participate (response rate = 84%). To maximize the variance of HC-HRM, students were asked to collect data from a maximum of 15 employees from any one organization. In total, 840 questionnaires (20 for every organization) were distributed and 639 filled questionnaires were returned. The students were instructed by the first author of this paper, and the data collection took place under close supervision. This method is frequently used in other studies (e.g., Spell & Arnold, 2007)

Measurements. All items were measured on a five-point scale (1 = *totally disagree/never* to 5 = *totally agree/always*), except for the innovative behavior items.

HC-HRM was measured using a nine-item HC-HRM scale developed by Sanders et al. (2008; based on Snell & Dean, 1985). An example item is: “A plan for my career is made in collaboration with my supervisor” (Cronbach’s $\alpha = .78$). We aggregate these individual perceptions to the organizational level (see also Bliese, 2000). The intra-class correlations and inter-rater agreement justified this aggregating. The intra-class correlation (ICC1) of the HC-HRM scale was .28, meaning that 28% of the variance of respondents’ perception of HC-HRM in their organization can be attributed to the organization the respondent belongs to. ICC2 for the HC-HRM scale is .78 and inter-rater agreement (r_{wg}) is .82.

Employees’ attribution is characterized by a combination of distinctiveness, consensus and consistency, which were measured using five items for every scale from the Delmotte et al. (2012) scale. An example item for distinctiveness is: “The HR department in my organization has added value.” An example item for consistency is: “In my organization HR practices change every other minute” (reverse coded). An example item for consensus is: “My organization regularly takes decisions based on favoritism” (reverse coded). All three scales were sufficiently reliable (Cronbach’s $\alpha > .76$). Applying the median split, we recorded the scores on the distinctiveness, consistency and consensus scales into three dummy variables with two values (0 = below average; 1 = above average). Although some variance is lost in using the median split, the median split makes it possible to

integrate scores in three dimensions in terms of distinctiveness, consistency, and consensus into eight information patterns (HHH, HHL, HLH, HLL, LHH, LHL, LLH, and LLL).

Affective commitment was measured using four items from Allan and Meyer (1990). Example items are “I am happy to spend the rest of my career working in my organization,” and “I feel part of the family of my organization.” This scale was reliable (Cronbach’s $\alpha = .78$).

Innovative behavior was measured with nine items (Scott & Bruce, 1994). An example item is: “How often would you search for new working methods, techniques, or instruments?” Respondents are asked to rate the items on a five-point scale, 1 = *never* to 5 = *always*). The scale was reliable (Cronbach’s $\alpha = .90$).

Controls. Information regarding respondents at the individual level (e.g., sex, age, level of education, and tenure), and the organizational level (e.g., industry and size) were included as controls.

Data analysis. Cross-sectional data are vulnerable to common method variance. Although we aggregated HC-HRM to the organization level to avoid common method variance we started the data analysis with assessing the severity of common method variance in two ways. First, we conducted the Harman’s one-factor test (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003) to check whether the majority of the variance of our data could be explained by one single factor. A principal component factor analysis revealed six factors (affective commitment, innovative behavior, HC-HRM, distinctiveness, consistency and consensus), with the first factor explaining 20 per cent of the total variance. Second, we conducted a confirmatory factor analysis in MPlus 7.0 to compare a single-factor model (common method) to the six-factor model on which our measures are based. The fit indices of the single-factor model appeared unacceptable ($X^2 = 4248.32$, $df = 592$, $p < .01$, $TLI = .80$, $CFI = .81$, $GFI = .63$, $RMSEA = .12$). In comparison, the six-factor model yielded an acceptable fit with the data ($X^2 = 915.51$, $df = 582$, $p > .01$, $TLI = .93$, $CFI = .94$, $GFI = .85$, $RMSEA = .06$). Although the two analyses we conducted cannot completely eliminate the threat of common method variance, they provide evidence that inter-item correlations in our study were not primarily driven by common method variance.

In line with our research interests, we recoded the information patterns as a dummy variable (HHH pattern = 1, all others = 0). We multiplied the scores of HC-HRM at the organizational level

with the dummy variable of the information patterns at the individual level to represent the joint effect of HC-HRM and employee attribution. We analyzed this cross-level moderated model using a hierarchical linear model (HLM; Raudenbush & Bryk, 2002). Using all possible patterns allows for testing of the moderating effect of attribution in terms of both Kelly's co-variation principle with the three conditions LHL, HLL and HHH and the full co-variation principle with eight conditions. To replicate the conditions of Study 1, we first contrasted the moderating effect of the HHH condition (coded as a dummy variable with a value 1) with the LHL and HLL conditions (coded as a dummy variable with a value 0). As an extension of Study 1, we further contrasted the HHH condition (coded as 1) with the other seven conditions (coded as 0).

RESULTS

Descriptive analysis. Table 3 presents correlations, means and standard deviations for the studied variables. HC-HRM and the attribution (1 = HHH) were positively related to affective commitment and to innovative behavior.

Hypothesis testing. Because the gender of the respondent was not related to any of the outcomes, it was not taken into account in the HLM analyses. Given the high correlation between age and tenure, only tenure within the organization was taken into account as a control. Because previous research has shown a significant relationship between employee outcomes and level of education (Scott & Bruce, 1994), we controlled for level of education in the analyses. Size and industry of the organization were not related to the independent and dependent variables (not in the table), and were not taken into account in the HLM analyses.

First we replicated Study 1 (the LHL and HLL conditions versus the HHH condition). The HLM results showed significant effects of HC-HRM ($b_{ib} = .23$; $b_{ac} = .28$; $ps < .01$), the attribution ($b_{ib} = .05$, $p < .05$; $b_{ac} = .08$, $p < .01$), and the cross-level interaction between HC-HRM and attribution ($b_{ib} = .08$, $p < .05$; $b_{ac} = .13$, $p < .01$). As expected, the figures show that the positive relationship between HC-HRM on one hand and innovative behavior and affective commitment on the other hand is stronger in the HHH condition (simple slopes: $b_{ib} = .19$ and $b_{ac} = .22$, $ps < .01$, respectively) than in the LHL and the HLL conditions (simple slopes: $b_{ib} = .08$, and $\beta_{ac} = .14$, $ps < .05$, respectively). These results replicate the findings of the experimental study.

Next, as an extension of Study 1, we contrasted the HHH pattern with the other seven patterns. The results are presented in Table 5. In the first step, the controls were added to the model. Tenure was positively related to affective commitment, and level of education was positively related to innovative behavior. In the next step, HC-HRM at the organizational level, employees' attribution (the HHH pattern versus all other patterns) and the cross-level interaction between HC-HRM and employees' attribution were added. HC-HRM was found to be positively related to employees' innovative behavior and their affective commitment. In addition, employees' attribution is positively related to affective commitment but not to innovative behavior. The results showed significant cross-level interaction effects between HC-HRM at the organizational level and employees' attribution at the individual level. The interaction effects are depicted in Figures 2a and 2b. The figures show that the positive relationship between HC-HRM on one hand and innovative behavior and affective commitment on the other hand is stronger in the HHH condition (simple slopes: $b_{ib} = .41, p < .01$, and $b_{ac} = .32, p < .05$, respectively) than in other conditions (simple slopes: $b_{ib} = .18, p < .01$, and $b_{ac} = .25, p < .05$, respectively). These findings again support our hypothesis.

CONCLUSIONS AND DISCUSSION

In Study 2 we examined the moderating effect of employees' attribution in terms of both Kelly's co-variation principle with three information patterns and the full combination model with eight patterns in a field study. Our purpose was to consolidate the results of the experimental study and extend the attitude outcome to a behavioral outcome. The findings showed that when employees perceive HRM as highly distinctive, highly consistent and highly consensual (attribution to management), the relationship between HC-HRM on one hand and employees' innovative behavior and their affective commitment on the other hand is stronger than when employees attribute HC-HRM in another way. These findings are consistent with the findings of the experimental study. The strength of Study 2 lies in its rigorous data analysis and external validity. Using cross-level data analysis, we demonstrate how HC-HRM as a contextual factor at the higher level and employee attribution at the individual level jointly shape not only their affective commitment but also their innovative behavior. In addition, with the participation of 639 employees from 42 organizations, this field survey study lends strong external validity to our research conclusions.

GENERAL DISCUSSION

The primary purpose of this research was to increase our understanding of the mechanism through which HRM (particularly HC-HRM) brings about desired employee outcomes. The underlying mechanism is highlighted through examination of employee attribution. Building on Bowen and Ostroff's (2004) theoretical model and relying on Kelley's (1973) co-variation principle, we propose that only when employees attribute HRM to management (given an information pattern of high distinctiveness, high consistency and high consensus), the effect of HC-HRM on employee outcomes can be maximized.

The results of the experimental and field study confirmed our hypotheses. In the experimental study (Study 1), we built on the co-variation principle (Kelley, 1973) and contrasted the information pattern of distinctiveness, consistency and consensus in the HHH pattern to the HLL and LHL pattern. The results showed that, under the HHH pattern wherein employees attribute HRM to management, HC-HRM stimulated their affective commitment to a larger extent than under the HLL and LHL patterns. In the field survey study (Study 2), the results of the experimental study were consolidated with a sample including 639 employees from 42 organizations, confirming that the HHH pattern optimizes the effect of HC-HRM on employee outcomes. In addition Study 2 showed that in case of low HC-HRM, meaning organizations are not or only practicing HC-HRM in a minimal way, the differences between the different information patterns were very small while organizations practicing high HC-HRM benefit extremely well from a HHH information pattern.

Theoretical Implications and Directions for Future Research. Numerous scholars have already discussed that HRM policies are not always interpreted by employees as intended by organizations (e.g., Laio, Toya, Lepak, & Hong, 2009; Kuvaas & Dysvik, 2010; Guest, 2011). For example, Liao et al. (2009) have demonstrated that employees' perceptions of HR practices significantly differ from those documented in managerial reports. In this article we build on this finding, using as a point of departure Bowen and Ostroff's (2004) theoretical framework.

This study makes a significant contribution concerning the process-based approach in HRM. Overall our findings support the notion that, to realize stronger positive effects of HC-HRM, employees need to be able to interpret HRM as it is intended by management. If employees cannot

understand the intention of management and instead attribute HRM to other sources such as the person or the context and time associated with HRM activities, our findings suggest that HC-HRM's effectiveness in stimulating employees' innovative behavior and affective commitment to the organization can be diminished or even eliminated.

It may be, however, that the effects of employees' attribution are not effective in the same way for all HR practices, nor for all kinds of employee outcomes. For instance it can be that attribution is more effective for core HR practices like pay, promotion possibilities and performance appraisal than for selection and recruitment (see Bednall et al, *in press*). In addition it can be expected that employee attitudes that are more associated with the employee–organization relationship are more sensitive to the effects of the process-based approach than employee outcomes related to employee–colleague (or team member) relationships, such as knowledge-sharing between team members or commitment to the team. Future research should examine these differences.

This study makes a significant contribution concerning methodology. HR researchers have long called for applying different methods in studying HR issues (Gerhart, Wright, & McMahan, 2000; Wright et al., 2005). As an answer to this call, this study used a mixed method consisting of an experimental study and a field study. The experimental design using the vignette (scenario) technique demonstrates a causal link between HC-HRM attribution and employee affective commitment. The field study using employees from 42 organizations further demonstrates the generalizability or external validity of the research findings. All together we showed that a combination of experimental research and a survey study is a useful approach which can be used in examining issues related to how HRM can be effective.

Among various experimental techniques, vignette (scenario)-based experimentation seems particularly valuable for HR researchers. A good scenario elicits respondents' experience in a real workplace setting and thus integrates contextual factors into the research design. More importantly, vignettes allow the researcher to systemically manipulate and vary research-relevant variables, which creates an opportunity to establish cause–effect relationships. Nevertheless, the use of vignette (scenario)-based experimental studies in HR research is relatively novel and has not been extensively explored yet. Many challenges lay ahead, such as determining the most effective techniques to elicit

respondents' workplace experience, and whether a scenario can be presented through various media (e.g., computer simulation or video presentation). Our results show that there is much to be gained from variety in experimental studies in HRM.

HC-HRM and employees' attribution were elicited in different ways in the two studies, corresponding to the characteristics of the experimental and survey research. In Study 1 we used a scenario to evoke respondents' perception of HC-HRM and respondents' attribution was manipulated by means of the information pattern in three different vignettes. In the scenario we tried to make as clear as possible that, within the virtual organization, management was commitment-based. HC-HRM was described by means of training, decision-making and performance appraisal as a bundle. The information pattern (distinctiveness, consistency and consensus) was manipulated, and the assumed attribution was created with the different manipulations. In Study 2 both HC-HRM and the information pattern were measured using valid scales to elicit the "real" environment of the respondents. Future research might make a comparison between the different designs and study, for instance, whether respondents having completed the experimental research perceive their own environment in a different way.

Limitations. In this study we manipulated employees' information pattern by way of a combination of three co-variation dimensions: distinctiveness, consistency and consensus. Although Kelley's work (1973) has proven that a unique combination of these three dimensions (informational pattern) specifies a unique attribution, future research will need to empirically examine the relationship between the different information patterns and attribution. Future research could include, for instance, the Causal Dimension Scale (Russell, 1982) to resolve the "fundamental attribution research error" (p. 1137), wherein researchers assume they can accurately interpret the meaning of the subject's causal attribution. The Causal Dimension Scale assesses how the respondent perceives the causes to which s/he attributes an event.

In this study we took two employee outcomes into account: affective commitment in Study 1 and innovative behavior and affective commitment in Study 2. Although both can be examined as desired outcomes, we found different effects. In general, results were stronger for affective commitment than for innovative behavior. There are two possible explanations for these results. First,

previous research has shown that affective commitment is more sensitive to social exchange and thus more vulnerable to (human resource) management intentions than innovative behavior (see also Angle & Perry, 1981). Second, while it can be assumed that affective commitment is a desirable employee outcome for all organizations, this may not always be the case for innovative behavior. It can be assumed that innovative behavior is more desirable in knowledge-intensive organizations, and is less valued in production or manufacturing organizations. In these organizations employee ideas are less valued and sometimes considered undesirable.

Practical Implications. The results of our two studies emphasize that organizations should not only (re)consider their HRM in terms of the content, but that they should reconsider the way HR practices are implemented and communicated to employees as well. Our research shows that organizations should consider the three information dimensions (distinctiveness, consistency and consensus) when communicating their policies. If employees perceive HRM as distinctive, consistent and consensual, they will attribute HRM to management, and thus HRM will be effective in the way management intended it. This means that it is important for employers, HR professionals and managers to know how employees within their organization perceive HRM. Instead of assessing employees' satisfaction as is often done in organization surveys, employees' perception of HRM in terms of distinctiveness, consistency and consensus should be assessed and further discussed among HR professionals, (line) management and employees.

In sum, our study demonstrates the importance of taking into account employees' attribution in determining how HC-HRM practices effect employee outcomes. When employees perceive HRM as distinctive, consistent and consensual, HC-HRM makes sense to them and will elicit stronger effects in their attitude and behavior. A crucial insight offered in this line of research is that employees' attitudes and behaviors need to be examined through the lens of attribution theory.

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Table 1. The information patterns for the three attributions (Kelley, 1973).

Attribution	Information pattern		
	Distinctiveness	Consistency	Consensus
Entity / Stimuli	High	High	High
Person	Low	High	Low
Context / Time	High	Low	Low

Table 2. Manipulation Checks in Study 1 (n = 341).

	HHH condition (n=110)		LHL condition (n=115)		HLL condition (n=116)	
	Mean	(SD)	Mean	(SD)	Mean	(SD)
Distinctiveness	2.94	(.49)	2.36	(.59)	2.61	(.57)
Consistency	2.89	(.62)	2.52	(.62)	2.31	(.69)
Consensus	2.92	(.49)	2.22	(.62)	2.10	(.65)

Table 3. Means, standard deviations and correlations between variables (below the diagonal, Study 1, $n = 354$ is presented; above the diagonal, Study 2, $n = 639$ is presented).

	Study 1		Study 2								
Variables	Mean	SD.	Mean	SD.	2.	3.	4.	5.	6.	7.	8.
<i>Measures</i>											
1. Innovative behavior	2.89	.39	3.05	.69	.39**	.42**	.26**	.01	-.11*	.14**	-.06*
2. Affective commitment	2.82	.48	3.13	.85		.39**	.21**	-.05	.08	.04	.10**
3. HC-HRM	2.85	.47	3.57	.58	.22**		.32**	.04	-.01	.20**	-.04
4. Attribution (HHH = 1)	.37	.49	.33	.47	.37**	.04		.02	-.09*	.06	-.11**
<i>Controls</i>											
5. Sex (1 = female)	.70	.43	.46	.50	.09	.06	.09		-.05	.06	-.11*
6. Age	41.22	11.91	34.34	12.14	-.04	-.07	.08	-.21**		-.03	.71**
7. Level of education	3.59	.79	3.62	1.01	-.10	-.14	-.06	-.05	-.06		-.14*
8. Tenure within the company	13.92	11.82	10.76	8.92	.01	.01	-.09	-.08	-.08	-.08	

HHH = high distinctiveness, high consistency, high consensus.

** $p < .01$; * $p < .05$

Table 4. Linear Regression analyses with dependent variables affective commitment (Study 1, n=354)

	Model 1	Model 2	Model 3
<i>Controls</i>			
Age	-.09	-.10	-.10
Gender	.06	.03	.04
Level of education	-.09	-.08	-.07
Tenure within the organization	.02	.02	.02
<i>Theoretical variables</i>			
HC-HRM		.14*	.14*
Attribution (HHH=1)		.22**	.21**
HC-HRM * Attribution			.30**
Percentage explained variance	3	25	29

Table 5. Hierarchical Linear Regression analyses (HLM) with dependent variables innovative behavior and affective commitment (Study 2, n=639).

	Innovative Behavior		Affective Commitment	
	Model 1	Model 2	Model 1	Model 3
<i>Employee level</i>				
Tenure within at the organization	.07	.07	.09**	.09**
Level of education	.05*	.06*	.06	.02
Attribution (HHH = 1)		.02		.06*
<i>Organization level</i>				
HC-HRM		.29**		.34**
<i>Cross-level interactions</i>				
HC-HRM * Attribution		.07*		.15**
Intercept	3.05**	2.64**	3.18**	3.07**
Model fit	1132.62	1005.34	1403.20	1313.93
Deviance	5.37*	127.28**	6.71*	89.27**

FIGURES

Figure 1. Affective commitment as a function of HC- HRM and employees' attribution, Study 1.

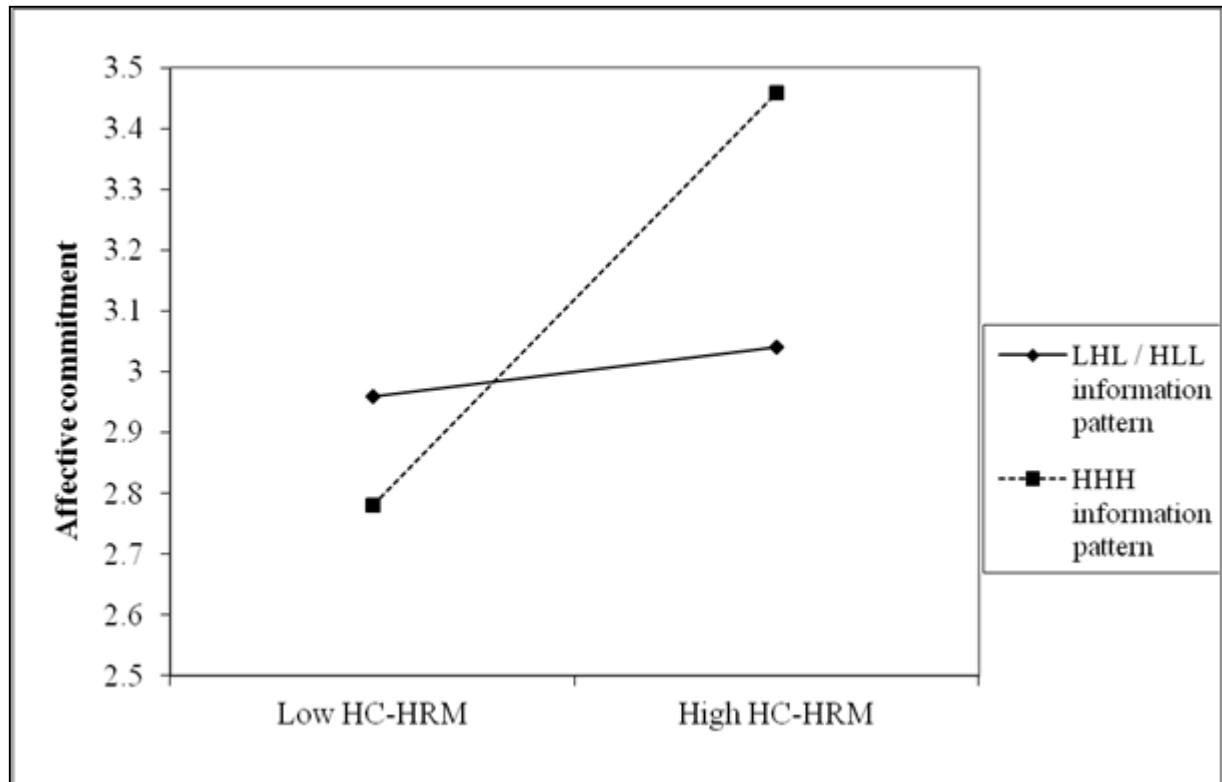


Figure 2a. Innovative Behavior as a function of HC-HRM at the organizational level and employees' attribution on the employee level, Study 2.

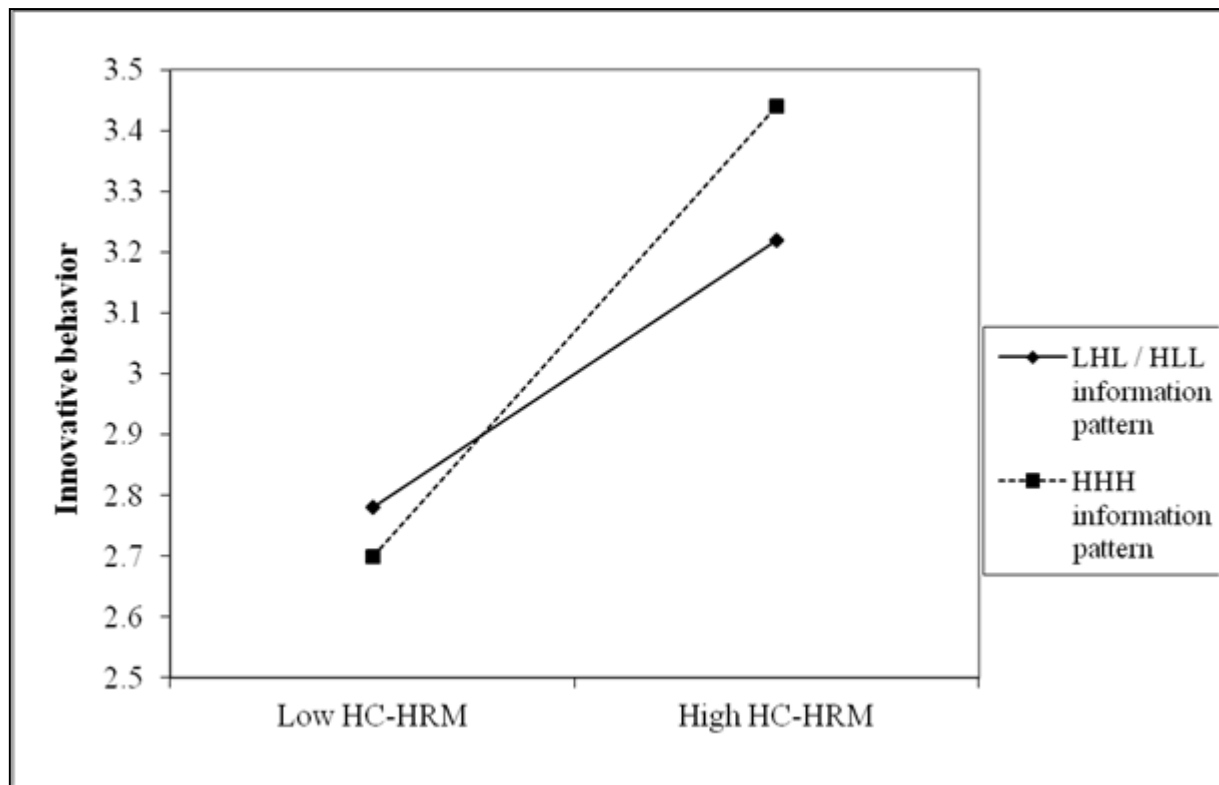


Figure 2b. Affective commitment as a function of HC-HRM at the organizational level and employees' attribution on the employee level, Study 2.

